

**ABSTRACT**

Novel optical devices based on diamondoid-containing materials are disclosed.

5 Materials that may be fabricated from diamondoids included diamondoid nucleated CVD films, diamondoid-containing CVD films, molecular crystals, and polymerized materials. Devices that may be fabricated from the diamondoid-containing materials disclosed herein include solid state dye lasers, semiconductor lasers, light emitting diodes, photodetectors, photoresistors, phototransistors, photovoltaic cells, solar cells, anti-  
10 reflection coatings, lenses, mirrors, pressure windows, optical waveguides, and particle and radiation detectors.